

NWT  
A  
BSEAP  
Fin  
1984  
C. 2

INDEX

A1. SOCIO ECONOMIC RECOMMENDATIONS

A2. GOVERNMENT MANAGEMENT RECOMMENDATIONS

A3. ENVIRONMENTAL RECOMMENDATIONS

FINAL ARGUMENT OF THE GOVERNMENT  
OF THE NORTHWEST TERRITORIES

- Beaufort Sea Environmental  
Assessment and Review Panel

16 JANUARY 1984



11 1986

POLAR  
PAM  
4365

IT Dept. of Culture and  
Communications.



## I N D E X

### A) SOCIO ECONOMIC RECOMMENDATIONS

### B) GOVERNMENT MANAGEMENT RECOMMENDATIONS

### C) ENVIRONMENTAL RECOMMENDATIONS



A) SOCIO ECONOMIC

The Panel is well aware that the Government of the Northwest Territories presented five submissions on socio economic issues in Inuvik. These included the following:

1. The Department of Local Government on Community Growth Options.
2. The Department of Social Services on Psycho-Social Effects.
3. The Department of Economic Development on Employment and Business Development.
4. The Department of Justice and Public Services on Archaeological Resources.
5. The Inuvik Regional Office on the Community of Tuktoyaktuk.

In Yellowknife, the Government of the Northwest Territories presented three panels on government funding, management, and energy supply. During the hearings in Yellowknife, Inuvik and Ottawa, presentations by other intervenors did not appear to contradict the Government of the Northwest Territories' material. The Government of the Northwest



Territories submits that the proponents on numerous occasions agreed with many of the concerns and recommendations presented by the Government of the Northwest Territories'. It is also suggested that the Government of the Northwest Territories submissions reflected many of the concerns raised at the community sessions by northern residents.

Most of these departmental submissions concluded with recommendations to the Panel. The Government of the Northwest Territories submits that these recommendations are still valid and should receive serious consideration by the Panel. The recommendations from the various submissions, summary, are as follows.

From Inuvik 37: Community Growth Options and Guidelines - Department of Local Government

- 1.1. The Government of the Northwest Territories supports industry's intention to have the majority of their construction and operating personnel commute from outside the Beaufort Region, provided all existing residents of the Region are given prior opportunity for employment with industry.



1.2. The Government of the Northwest Territories does not support the establishment of any new communities in the Beaufort region given industry's current development plans.

1.3. The Government of the Northwest Territories does support and encourage the population growth of existing communities in the Northwest Territories as a result of Beaufort development if the following conditions are met:

1.3.1. the growth is supported and approved by the Community Council.

1.3.2. the Government of the Northwest Territories is satisfied that the Government of the Northwest Territories and the community government have the financial capability to provide the necessary infrastructure and services to support the growth.

1.3.3. the growth will be of a long term nature (i.e. greater than 20 years) and hence provide a stable economic base for the community which will reduce the possibilities of major boom/bust cycles.



1.3.4. the growth will be gradual and controlled allowing the community sufficient time to prepare for and manage the growth.

1.4. The Government of the Northwest Territories supports the physical and social separation of the construction or southern rotational labour force from the existing communities to the largest extent possible.

1.5. Where industrial growth occurs outside communities the Government of the Northwest Territories supports the centralization and consolidation of such facilities to the largest extent possible.

1.6. The Government of the Northwest Territories does not support the establishment of major construction camps, shorebases or other industrial facilities outside of communities that will require in the short term or the long term the provision of government services such as education, health, social services or municipal services.

From Inuvik 27: The Department of Economic Development and Tourism

2.1. Beaufort Sea hydrocarbon development is a major opportunity to further the development of the northern labour force, to provide wage employment, and to



transfer skills to Northerners. The proponents, in consultation with the Government of the Northwest Territories, must develop affirmative action programs with respect to the hiring, training, and educational upgrading of Northerners. (For these purposes, "Northerner" is defined as an individual having resided in the Northwest Territories for a period of one year or longer).

2.2. The proponents should increase their participation in formal apprenticeship programs sponsored by the Government of the Northwest Territories. As hydrocarbon activities proceed to the production phase opportunities to rely upon formal training programs should increase.

2.3. There is a pressing need for lifeskills training and adult academic upgrading programs associated with the participation of Northerners in the non-renewable resource development. The proponents should include lifeskills training programs as one component of the company offered programs designed to overcome cross-cultural barriers to the employment of Northerners. It is recognized that the development and delivery of adult upgrading programs is a responsibility of the Government of the Northwest Territories. Industry's cooperation by employing



graduates of adult upgrading and industrial training programs is necessary.

2.4. Reliance on work rotation schemes has resulted in the spreading of direct employment benefits to residents of Beaufort Sea-Mackenzie Delta communities. Contingent upon the aspirations of individual communities, the Government of the Northwest Territories favours the expansion of the rotational employment area to additional communities in the Northwest Territories as one means of increasing the level of northern participation.

2.5. The practices of labour unions involved in Beaufort Sea hydrocarbon development should accommodate the unique needs of the Northern labour force, in order to attain northern participation objectives.

2.6. Industry must adopt northern business development policies which are designed to extend benefits to businesses in the Northwest Territories. Specifically, the proponents should be required to include affirmative action business development components.



2.7. In the interest of transferring economic benefits to the territorial economy, and to further the development of the tourism industry in the Northwest Territories, the proponents should encourage the utilization of regional tourism facilities, contingent upon community aspirations. The proponents are encouraged to work with the Department of Economic Development and Tourism in identifying opportunities in this area.

2.8. As the Government of the Northwest Territories is interested in fostering the development of renewable resource opportunities relating to all aspects of their use, including domestic/subsistence, commercial and outdoor recreational uses, the proponents should adopt northern purchase policies which encourage the purchase of renewable resource products within the sustainable yield limitations prescribed by government.

From Inuvik 26: A Overview of the Psycho-Social Impacts of Resource Development

3.1. Assistance should be given to communities to develop a strong infrastructure of informal, volunteer, as well as professional, human support services.



- 3.2. Work to establish a strong data base regarding the psycho-social impacts of resource development in the Northwest Territories should be supported by industry, government and residents.
- 3.3. The availability of liquor and drugs both within the work sites and in affected communities, should be controlled and the effects of any increased availability closely monitored.
- 3.4. The proponents, contractors, and sub-contractors should have employee Alcohol and Drug Assistance Programs in place.
- 3.5. The proponents, contractors, and sub-contractors should return an employee to his/her place of hire, no matter how the employment is terminated, whether by illness, imprisonment, or other means.
- 3.6. The proponents, contractors, and sub-contractors should have on-site cultural awareness/orientation programs for both southern hires and northern hires in order to ensure appropriate adjustment and the development of healthy, cooperative work relations.



3.7. Guidelines for access to a community by employees at a campsite should be developed in consultation with the affected community.

3.8. The proponents, contractors, and sub-contractors should continue to support community based preventive social programs such as day care, alcohol and drug committees, recreation committees.

4. Workers' Occupational Health and Safety

A joint Government of the Northwest Territories/COGLA Agreement should be negotiated whereby Government of the Northwest Territories officials regularly inspect offshore installations and artificial islands in such matters as occupational health and safety, fire safety, boiler and pressure vessels and electrical safety.

5. From Inuvik 14: The Protection of Archaeological Sites in the Northwest Territories

The proponents should provide an archaeological impact statement in order to plan for the protection of archaeological resources.



6. From Yellowknife 15: Beaufort Community Energy Futures

Industry should assist in the development of energy supply alternatives by cooperating in new source investigations and if economically viable solutions are found, dedicating resources to their development. The major energy users should collaborate with government in a research and development program with the intention of installing an alternative energy supply system that will meet the area's need for many years to come.



B)

GOVERNMENT MANAGEMENT

1. From Yellowknife 17: Government of the Northwest Territories Participation in the Northern Oil and Gas Activities Program (NOGAP)

The NOGAP program, because of its systematic approach to develop and fund research and planning projects, should be supported.

2. From Yellowknife 18: Government Funding related to Major Resource Development

A financial program to provide the Government of the Northwest Territories with discretionary funding related to needs associated with resource development should be developed and implemented. This supports a priority already identified by DIAND.

3. Future applications to produce or transport oil or gas from the Beaufort Sea region should be reviewed through a public process to evaluate the specific potential environmental and socio economic impacts. The process should ensure that:



- 3.1. funding is available to allow participation of public organizations;
- 3.1. future reviews in the Northwest Territories are managed jointly by the federal and territorial governments;
- 3.1. applications to be reviewed should be at the final design stage; and
- 3.1. if conditional approval is granted, similar to that given to the Norman Wells project by the National Energy Board, that extra funding be made available to allow intervenors continue to be involved until the application is complete.

#### Rationale

Throughout the hearings, continual reference was made by the proponents, intervenors and Panel to the 'conceptual nature' of the proposals presented by Dome, Gulf and Esso. Site specific plans were not available to permit a comprehensive review of the locations selected for facilities, the mitigative measures to be implemented or the



government programs required to respond to the various development proposals. It is difficult to conclude that "an adequate assessment of possible environmental and socio economic effects has been done" (Dene Nation, YK-40, 2). The Department of Fisheries and Oceans (OT-2, 16-17) and the Beaufort Sea Alliance (IN-6) also recommend that future applications to produce or transport oil or gas from the Beaufort Sea region require additional environmental assessment.

Mr. Donihee (YK-4, 22) mentioned the drain on financial and personnel resources that conditional approval of the Norman Wells pipeline project incurred on his department. This is especially important to consider if continuing participation of public organizations in a conditional approval is desired (Dene Nation, YK-19, 5).

4. If a management structure for coordinating development in the Beaufort Sea is to be modelled after the Norman Wells Coordinating Office then its functions should be expanded to include:

4.1. assisting the planning for the implementation of monitoring, surveillance and enforcement programs;

4.1. coordination of monitoring studies on environmental and socio economic effects within and among production projects; and



4.3. coordination of surveillance and enforcement programs among government agencies and industry.

A preliminary evaluation of the Norman Wells Coordinating Office should occur in late 1984 to assist in the development of the terms of reference for a Beaufort management structure. The terms of reference should be developed in consultation with the federal and territorial governments, industry, native organizations and the communities.

Rationale

The Department of Renewable Resources questioned Mr. Mar of the Norman Wells Coordinating Office to determine how the role of that office could be expanded if it is to be used as a model for a Beaufort management structure. Both Mr. Mar and Esso Resources (YK-38) agreed that such a project office should be established during the application stage (8 Dec., Vol. II, 20). The office would then be involved immediately to coordinate the management of the project. Mr. Mar strongly recommended that a coordinating office should be involved in planning for program implementation (8 Dec., Vol. II, 22). The office would be aware of all programs being planned and would be able to point out where programs were duplicating each other or where additional programs might be required. The Norman



Wells office is not involved with environmental effects monitoring. However, a future coordinator should be involved in coordinating all monitoring efforts. This includes environmental and socio economic effects monitoring as well as compliance monitoring (surveillance and enforcement). The coordination should begin with the planning phase and continue to ensure implementation of these programs.

Mr. Mar (YK-39, App.2, 2) stated that an evaluation of the effectiveness of the Norman Wells Coordinating Office would occur when the construction of the oil field expansion and pipeline was completed. However, if terms of reference for a Beaufort Sea management structure are to be developed soon, then a preliminary evaluation of the Norman Wells Coordinating Office would be valuable. Any office which is to coordinate the activities of industry, government agencies and the public, should have its terms of reference reviewed by all participants.

5. Federal legislation relating to offshore compensation in the four statutes requires clarification in the following areas:

5.1.1. overlap and inconsistencies among the four statutes;

(Arctic Waters Pollution Prevention Act, Oil and Gas Production and Conservation Act, Fisheries Act, Canada Shipping Act) and



5.1.2. the adequacy of the limits of liability and third party losses for a major oil spill.

Rationale

The proponents, the Government of the Northwest Territories and DIAND submitted evidence to the Panel outlining some of the problems associated with the legislation for compensation claims by renewable resource harvesters (IN-84; Legislative Offshore Compensation Concerns - GNWT; OT-16). These problems included inadequate limits of liability to cover costs of clean-up and to settle the claims of third parties incurring damage, the necessity to prosecute under all the various federal statutes to obtain a complete settlement, and the requirement in the statutes for courts to be used by a claimant to obtain a settlement which would result in lengthy, expensive court battles and delays in receipt of compensation. Those types of issues need to be resolved before a major oil spill or increased development activities occur.

6. The utility of the government contingency plan for oil spills should be evaluated by DIAND. The government contingency plan should be tested annually in response to mock oil spills occurring in open water conditions and in ice conditions. The availability of additional equipment and manpower should be determined.



## Rationale

In the redrafted version of the Arctic Seas Contingency Plan, DIAND is the lead agency. (YK-25) The primary purpose of the plan is for DIAND to act as a 'watchdog' as Industry cleans up an oil spill. This is a role DIAND is responsible for even if a contingency plan did not exist. The secondary purpose of the plan is to assist Industry in cleaning up an oil spill or to take over the clean up of an oil spill. The discussions in Yellowknife suggested that, apart from the Canadian Coast Guard, the federal and territorial government departments had only some expertise and little equipment which could be used to clean up oil spills (8 Dec., Vol. II, 51-59). By the time the Arctic Seas Contingency Plan is enacted, all available equipment will already be in use cleaning up an oil spill.

The proponents emphasized, in the Environmental Impact Statement and at the Inuvik general session, the training and experience of their oil spill personnel. They also reviewed the mock oil spill response exercises that are conducted each year. The Arctic Seas Contingency Plan has not been tested in recent years. The expertise of the suggested on-scene commanders (16 Dec., Vol. II, 37-38) in oil spill contingency planning or execution was never established. If the Arctic Seas Contingency Plan is to achieve its objectives then it must



be tested annually under varying environmental conditions and the personnel who administer the plan must be trained and must participate in those exercises.

7. DIAND should expand its review of government regulation to include participation of all federal and territorial agencies that have regulatory responsibilities. Industry and native organizations should be invited to comment on the review.

#### Rationale

In Inuvik and Ottawa, representatives of DIAND stated that a northern regulatory review would be done to determine whether a 'regulatory jungle' exists (24 Nov., Vol. I, 14; 16 Dec., Vol. II, 17). Mr. Watson indicated that it would be appropriate "to consider the Beaufort Sea development as a case history in the application of regulatory approval processes." (16 Dec., Vol. II, 18). Once it has been determined whether a problem exists, Mr. Faulkner stated that the government of the Northwest Territories and others will be consulted to investigate the problem (16 Dec, Vol. II, 17). DIAND's submission also indicated that the compensation legislation was "being addressed through the Department's regulatory review which includes ongoing inter-departmental and intergovernmental consultation." (OT-16, DIAND response to Compensation Legislation question raised at Inuvik, 2).



c)

## ENVIRONMENTAL

The Department of Renewable Resources of the Government of the Northwest Territories recommends that:

1. No production proposals which involve the transport of oil by tanker be considered because the risks are currently unacceptable. Should transport of hydrocarbons by tanker from the Beaufort Sea to Davis Strait be considered, then
  - 1.1. ice track crossing tests should be conducted in the Eastern Arctic by the proponents before approval is granted to evaluate the extent to which travel by Inuit is disrupted;
  - 1.2. a class 8, 9 or 10 ice breaker should be used to evaluate the effects of year-round vessel traffic on the ice regime along the proposed tanker routes;
  - 1.3. the responses of ringed seal, polar bear, Peary caribou and muskoxen to the vessel traffic and the changes in the ice regime should be monitored. Those tests should be conducted prior to approval of hydrocarbon transportation by tanker and be sponsored by the proponents, federal government departments and territorial government departments;
  - 1.4. approval be limited to transportation of natural gas until oil spilled in moving pack ice or open water along the proposed tanker route can be cleaned up at the scene of the accident to prevent environmental damage or until the tanker design is proven to have a level of risk which all regulatory agencies agree upon; and
  - 1.5. the route should be recommended by the Environmental Advisory Committee on Arctic Marine Transportation (EACAMT).

## Rationale

Predictions of the effects of year-round vessel traffic on the environment were presented by the proponents and the intervenors. However, no class 10 ice breaking tanker or even icebreaker has been built. The designs of these vessels are



not yet finalized. With such untested technology, predictions in some matters are merely educated guesses. Effects of year-round vessel traffic on the environment should be investigated before granting approval to any project.

The Panel heard evidence that ice and water conditions in the Parry Channel differ from those in the Beaufort Sea. A strong current flows through Barrow Strait; the first year ice is not stabilized by grounded ice ridges and the ice ridges are less pronounced than in the Beaufort Sea. Those factors suggest that the ability to cross vessel tracks made in Parry Channel ice may be different from that observed in the Beaufort region. People from the eastern arctic communities who witnessed the Beaufort Sea trials echoed this concern. The people of Resolute, stated that the ability to cross Barrow Strait is important to them.

Risk analysis, discussed in Inuvik pointed out that the probability of an oil spill resulting from a tanker accident exists. Therefore, oil spill clean up capability must be considered when decisions about transportation modes are made.

Discussions on the effectiveness of proposed oil spill countermeasures resulted in notable conclusions. The participants agreed that little capability exists to clean up an oil spill in moving pack ice or in open water along the proposed tanker route. Attempts could be made to track the oil and to clean up sensitive shorelines once they were contaminated. During this time, many components of the environment could contact the oil. Serious effects on bird colonies or summer polar bear retreats could occur. Dispersants are not yet a reliable countermeasure in Arctic waters or for oil-in-water emulsions. The conditions under which they will be both effective and nontoxic are not well understood. Oil spill countermeasures have not advanced to the point at which a major spill from a tanker could be dealt with. Risk needs to be reduced and clean up capability increased before the shipment of oil by tanker through the Arctic Islands becomes acceptable.

Several environmentally sensitive areas, including the breeding areas for ringed seals in Barrow and Prince of Wales Strait, exist along the routes selected by the proponents for the Arctic tankers. Mr. Hodgson of the Ministry of Transport indicated that the Department would look to the EACAMT for direction on how environmental concerns should influence the route of a shipping lane in the High Arctic (14 Dec., Vol. II, 78). The Committee has not issued its recommendations and no shipping route should be finalized without their report.



During the community hearings in the eastern and high arctic and at the general session in Resolute Bay, the residents of those communities repeatedly stated their opposition to the transport of hydrocarbons by tankers along the proposed tanker route.

2. Production proposals which involve the transport of oil or gas through a buried, chilled or ambient temperature pipeline up the Mackenzie Valley are acceptable, provided appropriate mitigative measures are incorporated into the design, construction and operation. Should transport of hydrocarbons by pipeline be considered then:

2.1. construction of the new pipeline should benefit from the lessons learned from construction and operation of the Interprovincial Pipe Line between Norman Wells and Zama, Alberta;

2.2. all pipelines should be contained in a corridor which is located east of the Mackenzie River. The Panel should consider whether the evidence presented is adequate to evaluate cumulative impact of two or more pipelines within such an energy transportation corridor;

2.3. the pipeline terminals, pump stations, rights-of-way and access roads should avoid environmentally sensitive areas identified by the Canadian Wildlife Service and the Department of Renewable Resources; and

2.4. research should be conducted to determine whether, from an environmental point of view, the location of subsequent pipeline rights-of-way should be shared, adjacent or totally separate within an energy corridor.

### Rationale

Justice Berger concluded that "it is feasible, from an environmental point of view, to build a pipeline and to establish an energy corridor along the Mackenzie Valley" (Mackenzie Valley Pipeline Inquiry, Vol. 1, p. xvi). No evidence presented to the Beaufort Sea EARP Panel contradicted this statement. Evidence presented by the Dene Nation and the Government of the Northwest Territories (YK-3; YK-40) stressed that no new pipeline should be built until the Norman Wells pipeline was completed and operational. Mr. Metz, Panel Advisor felt that the terrain disruption on the Norman Wells pipeline would be greater than anticipated during the first five years. Mr. Slusarchuck agreed that major thaw settlement



would occur during the first five years (5 Dec., Vol.II, 41). Apart from third party damage, geotechnical conditions such as thaw settlement or frost bulbs are the most likely problems that could result in oil spills from a pipeline.

Monitoring studies of fish and wildlife are being conducted over the next three to five years. If environmental impacts of future pipelines are to be minimized then an evaluation of the environmental impacts that occurred during the construction and initial operations of the Norman Wells pipeline would be useful. This knowledge can then be incorporated into the design, construction and operation of a future pipeline.

The construction and operation of a buried pipeline requires a smaller workforce than for an elevated pipeline. Mr. Graf mentioned some of the consequences to wildlife populations from increased human population (IN-13). A smaller workforce will limit enforcement requirements and demand for wildlife products. In addition, a buried pipeline does not impede wildlife movements as much as an elevated mode. Mr. Hoos' comments indicate that a design for an elevated pipeline that will not hinder movements by moose is not complete (5 Dec., Vol. II, 84-85). The Department of Renewable Resources prefers a buried over an elevated pipeline mode.

Although the locations of the Norman Wells pipeline, the Mackenzie Highway right-of-way, the proposed Polar Gas pipeline, the proponents' oil pipeline and a possible high voltage transmission line are all east of the Mackenzie River, none of the routes are contiguous. The Department of Renewable Resources questioned the proponents and intervenors on their views of shared rights-of-way to determine the factors which restrict sharing. Their answers indicated that if required by a regulator, the companies building pipelines would share a right-of-way (Vol. I, 78). However, Mr. Pearce of Interprovincial Pipe Line was 'nervous' of having someone other than themselves building on their right-of-way (9 Dec., Vol. I, 2). Geotechnically, there appeared to be only local problems which would require some widening of the right-of-way at sensitive sites (5 Dec., Vol. I, 53). In addition, the proponents did not want an all-weather road associated with their pipelines (5 Dec., Vol. I, 92).

The proponents mentioned that the first right-of-way constructed would have preferential route choice and that the next right-of-way would have to select the second best route (5 Dec., Vol. I, 50). To minimize the amount of land required for an energy corridor, it is important to assess the suitability of the initial applicant's route for nearby routing of other possible pipelines. Justice Berger explains this concept in more detail in Chapter Two, Volume One, of the Mackenzie Valley Gas Pipeline Inquiry.



Environmentally sensitive areas in the Beaufort Sea region and along the Mackenzie Valley were identified by the proponents, the Department of Environment and the Department of Renewable Resources in evidence and through a mapping exercise at the Yellowknife general session (YK-3; YK-2; 7 Dec., Vol. II, 1-46). DIAND, must also be aware of these environmentally sensitive areas. Identification of potential areas of conflict between wildlife needs and industrial needs can now occur during the planning stage of a development project. If industry can avoid these areas, then major environmental impacts should not occur. However, local impacts will still need to be minimized through mitigative measures and minor route adjustments.

Although the Department of Renewable Resources would prefer that the rights-of-way for pipelines, electrical transmission lines, and roads be shared to minimize regional environmental impacts, studies have not been conducted to determine the optimal arrangement of these developments in the taiga to minimize local environmental impacts on furbearers and ungulates. A wide cleared right-of-way could restrict movements and thus use of an area by marten and moose. It is not known whether linear developments should be confined to one right-of-way or whether rights-of-way should be separated by strips of forest. Strips of forest could be cleared along the Norman Wells pipeline right-of-way to determine optimal arrangement. The Environmental Studies Revolving Fund could be an appropriate funding source for such a study.

3. The Panel should refer to and apply recommendations dealing with onshore production systems and buried pipelines from the report of the Mackenzie Valley Pipeline Inquiry, Volume II, where appropriate.

#### Rationale

Several witnesses remarked that pipelines have been discussed before other tribunals -- in greatest detail before Justice Berger at the Mackenzie Valley Pipeline Inquiry (14 Nov., Vol. III, 24; 9 Dec., Vol. I, 64; YK-20, 2). It is assumed by those remarks that the Panel will have reviewed and considered the judgements of its predecessors. In our opinion, the Panel should state that it has done so by applying those recommendations which it considers appropriate. The Mackenzie Valley Pipeline Inquiry made many recommendations which could be applied to the proponents' conceptual proposals. These recommendations are supported by volumes of evidence, which complement the evidence heard by the Panel at the Yellowknife general session.

4. The location of future shorebased industrial facilities required for production (supply bases, pipeline terminals, harbours) within the Northwest Territories should be limited to the existing sites of Tuktoyaktuk, McKinley Bay and Inuvik. Should additional sites be requested by the Industry within the Northwest Territories, the sites should be evaluated through the land use planning process.



## Rationale

In the Environmental Impact Statement and at the Inuvik general session, the proponents discussed their potential requirements for shorebased facilities. Those discussed included:

- a. McKinley Bay and Tuktoyaktuk harbour as exploration and production staging sites (15 Nov., Vol. I, 29,61);
- b. onshore pipeline terminals which would require access roads, shallow harbour, production facilities and pump stations. An oil pipeline terminal would probably be separate from a gas pipeline terminal (15 Nov., Vol. I, 33,34,58);
- c. oil and or gas storage facilities for short-term storage (15 Nov., Vol. I, 41);
- d. a deep water port, preferably on the Yukon coastline (15 Nov., Vol. I, 29);
- e. offshore/onshore pipeline junctions for gathering systems bringing oil or gas to a pipeline or tanker terminal (15 Nov., Vol. I, 42);
- f. enclave(s) for construction or permanent workers which may require shallow harbour facilities (15 Nov., Vol. I, 45; Vol. II, 56-57);
- g. various temporary exploration staging sites (15 Nov., Vol. I, 50); and
- h. a topping plant (14 Nov., Vol. III, 22).

Since the proponents did not suggest that all these facilities could be located at a common site, legitimate concern for the proliferation of shorebased facilities exists. The Department of Fisheries and Oceans mentions their opposition to the development of new shorebases in areas of critical fish habitat (OT-2, 11). The Department of Renewable Resources supports their position. In addition, disturbance to terrain and wildlife will be minimized by minimizing the number of locations required for facilities and the associated human activities. Richards Island and Baillie Island were mentioned as concentration areas of grizzly bear and polar bear, respectively (YK-2 map; IN-9, 6). In these areas, no permanent facilities should be located. Locating pipeline terminals, topping plants or storage facilities on the mainland will also reduce the need to place pipelines across the Mackenzie Delta or river channels. The proponents argued that most of the Northwest Territories section of the Beaufort Sea coastline was unsuitable for a deep water port, however, no arguments were advanced to suggest that the other shorebased facilities mentioned could not be located at McKinley Bay or Tuktoyaktuk or Inuvik. If industry requires additional sites for shorebased facilities, then the sites should be evaluated through the land use planning process.



5. A comprehensive plan to monitor environmental effects should be a component of any approval granted to produce or transport oil or gas. This monitoring plan should:

- 5.1. be developed from clear objectives;
- 5.2. be developed cooperatively with the involvement of the industry, communities, native organizations, federal and territorial departments, and any other interested public;
- 5.3. ensure that studies are conducted during the construction, operation and abandonment of a project to determine long term impacts;
- 5.4. specify whether the available preconstruction information is adequate for carrying out the desired program. Ideally, construction would not begin until the preconstruction data are complete;
- 5.5. identify those effects which cannot be monitored and what, if any, action should be taken; and
- 5.6. specify the agency responsible for conducting each monitoring study.

Funding to conduct monitoring studies should be secured before the onset of the monitoring program. The proponents and participating agencies should host annual workshops for the purpose of:

- 5.7. receiving progress reports from ongoing studies;
- 5.8. evaluating previous studies;
- 5.9. considering new monitoring proposals; and
- 5.10 recommending changes in priorities for the next year.

Native organizations or other public groups which express an interest in monitoring should be provided with sufficient funds to attend the workshops.

### Rationale

Dr. Beanlands made a clear distinction between 'compliance' monitoring and 'effects' monitoring (18 Oct, Vol. II, 11). The above recommendations refer only to effects monitoring. The Beaufort Sea Environmental Monitoring Program (BEMP) initiated by DIAND and Environment Canada is commended. The program as explained by Dr. Stone is limited to developing a monitoring framework to determine industrial effects in the offshore



Beaufort Sea environment (18 Nov., Vol. III, 121). A similar program to determine industrial effects on the onshore Beaufort Sea and Mackenzie Valley environment could develop a plan for monitoring onshore environmental effects.

The development of a comprehensive monitoring plan requires knowledge of the plans of industry for facilities and activities and assessment of those activities by scientists and the people who are affected. Therefore, the involvement of industry, communities, native organizations and government agencies is important. The Beaufort Sea Coordinating Office may offer a convenient mechanism which may be useful to coordinate monitoring studies.

Funds received by the Department of Renewable Resources to monitor some of the environmental effects of the Norman Wells pipeline will not allow studies to continue beyond 1985 (YK-4, 15). Environmental effects may continue beyond 1985, especially those related to trapping activities and to effects on peregrine falcons. Because natural variation of environmental factors, such as snow conditions or water levels, may magnify or minimize an environmental effect caused by an industrial activity, the monitoring plan should identify those effects which will require long term studies.

Mr. Donihee stated that monitoring some of "the effects of a project must necessarily begin with some understanding of preconstruction conditions" (YK-4, 15). It thus becomes important for a monitoring program to be initiated early enough to identify which monitoring studies require preconstruction data. In other situations the techniques to monitor a predicted effect, such as the effect of tankers on breeding areas of ringed seal in Prince of Wales Strait, have not been developed (18 Oct., Vol. II, 11). Early development of a monitoring program may allow identification of knowledge gaps soon enough that research may be done to fill those gaps. The Certificate of Convenience (OC-35) granted by the National Energy Board to the Norman Wells pipeline project did not request Interprovincial Pipe Line to present a monitoring plan until it has been given leave to open (YK-4, Suppl., 4). Therefore, the company will not begin monitoring studies until after the construction of the pipeline is completed. Monitoring studies identified by government agencies are still not all implemented (YK-4, 15). The early development of a monitoring plan should then be followed by commitments from government agencies and industry to implement those studies before construction of a project begins.

Dr. Stone did not say whether BEMP would identify only studies which DIAND should implement to complement their regulatory responsibilities or whether the monitoring plan would identify all studies required for the effort to be comprehensive. If the agency or company responsible for implementing a monitoring study were identified, confusion and argument over who should do what would not occur.



Costs of developing a monitoring plan and of conducting monitoring studies cannot be met with existing departmental budgets. Special impact funding was received by the Government of the Northwest Territories to conduct monitoring studies of some of the environmental effects of the Norman Wells pipeline (YK-4, 4). The Department of Renewable Resources will again require similar special impact funding to monitor future projects producing or transporting hydrocarbons from the Beaufort Sea Region.

Annual reviews of monitoring studies were proposed by the proponents (Vol. 7, 1.3) and were also recommended by the Department of Fisheries and Oceans (OT-2, 17). The Dene Nation stated their desire to become involved with monitoring (YK-22). An annual workshop involving all interested parties could encourage the review of new monitoring proposals, the incorporation of data from ongoing studies into the design of new mitigative measures, the elimination of unproductive studies and the establishment of new priorities, as necessary.

6. Federal and territorial government agencies, native organizations and communities should explore and develop options to expand the renewable resource economy. A study to document the harvest of fish and wildlife resources within the Beaufort Sea and Mackenzie Valley Regions is required before expansion of commercial harvest can occur.

The relationship of wage employment to the renewable resource economy should be examined through a joint study involving industry, government and native organizations. It should include the effects of wage employment on hunting, travelling, trapping and fishing, the influence of those effects on the renewable resource economy, and should begin immediately.

### Rationale

Justice Berger stated that the postponement of the Mackenzie Valley Gas Pipeline could allow modernization and expansion of the renewable resource economy to occur (Vol. 1, 140). He noted that:

"Non-renewable resources industries, including the oil and gas industry, sometimes produce uncertain and sharply fluctuating patterns of economic growth. Northerners must be protected, so far as is practicable, against the impacts of such uncertainty and fluctuation - another compelling reason for insisting on the development of an alternative, long-term and stable renewable resource sector." (Vol. 2, 3).



At Resolute Bay, Mr. Williams of the Arctic Bay Hunters and Trappers Association said that they wanted the young people to have the opportunity to become educated and also have other ways to make a living rather than relying only on industry for jobs (20 Oct., Vol. I, 40). Ms. Erickson emphasized the need to strengthen and diversify the renewable resource sector (21 Nov., Vol. I, 39). Dr. Usher and Ms. Donaldson noted that some cash is required to maintain the harvest of renewable resources (19 Nov., Vol. II, 83; 17 Nov., Vol. III, 17-18), however, the source of that cash is not necessarily wages earned through employment by industry. Marketability of the skills of renewable resource harvesters or products from renewable resources can be enhanced by increased industrial activity. Examples include the sale of country foods and the provision of polar bear monitors at industrial sites. Other markets also need to be developed. The ability of northern native residents to participate in the harvesting of renewable resources must not become dependent on wages received from or projects sponsored by industry.

Eventually exploration and the future production of the Beaufort Sea oil and gas reserves will cease, but, the native people who reside in the Beaufort Sea region will remain. The Panel's Guidelines asked the proponents to discuss the effects of abandonment on the residents of the Beaufort Sea region. If alternate economies, independent of industrial developments, are developed then the effects of abandonment upon the residents will be reduced.

Mr. Graf explained the need for a study to document the harvest of fish and wildlife resources in the Beaufort Sea region and Mackenzie Valley (IN-13). Initiation of such a study was also recommended by Justice Berger (Mackenzie Valley Pipeline Inquiry, Vol. 2, 34-35). Commercial development of the renewable resource sector must not infringe upon domestic needs of residents of the region. The harvest study is required, in part, to determine those needs.

Agreement on the effects of development on the renewable resource economy was not reached during the discussions at the Resolute and Inuvik general sessions. Lack of information on the components of the renewable resource economy prevents analysis of the problem. 'Renewable resource economy' was not defined in the hearings. Techniques for measuring and evaluating any effects on the renewable resource economy from increased development were not described. A well designed harvest study would give a basic understanding of the fish and wildlife sector of the renewable resource economy (21 Nov., Vol. I, 50-51). Fur export returns only give a partial index of the trapping economy (IN-13, 8; 21 Nov., Vol. II, 56).



7. After the territorial government's compensation policy has been finalized, any compensation program established by industry or federal government agencies should:
  - 7.1. adhere to the principles within the compensation policy;
  - 7.2. be established prior to granting approval to a project;
  - 7.3. relate to the rights of renewable resource harvesters for all their renewable resource harvesting activities (eg. fishing, hunting, trapping, logging);
  - 7.4. be accompanied by a harvest data collection project if one is not already established; and
  - 7.5. be responsive to losses which can be attributed to industry but not necessarily to a specific company.

#### Rationale

The Department of Renewable Resources submitted its Compensation Policy to the Panel (IN-42). The Department emphasizes that compensation is not an alternative to good project management. Avoidance of impacts and mitigation of impacts, to the degree possible, must precede compensation. DIAND's submission on compensation stated:

"The Department has no legal liability, as a result of issuing approvals for projects, to provide compensation resulting from project effects on renewable resources and harvesters." (OT-16, 2).

Therefore, it is important that DIAND does make compensation agreements a component of project approvals. Native people do not have proprietary rights to the renewable resources which they use. They must rely on government to ensure that industry establishes programs to compensate for losses.

The Dene Nation submitted evidence outlining their views on compensation (YK-20). The Department of Renewable Resources' policy is only directed at claims for economic losses and not for the loss of a way of life. Presently, our policy is under consideration by communities, industry, native organizations and other government departments. When it is finalized, the Government of the Northwest Territories will seek to ensure that compensation programs established by industry or other parties adhere to that policy. Compensation should be comprehensive of all activities carried out by renewable resource users. Information about previous harvest of a claimant will enable a fair compensation award. Mr. Graf noted



that no adequate harvest data collection projects existed in the Beaufort Sea Region or Mackenzie Valley (IN-13, 15). DIAND also recognized the value of historical harvest data to document and assess effects of development on wildlife harvests (OT-16, 3). The Department of Renewable Resources has included a proposal to develop a harvest data collection program in the Beaufort Sea region and Mackenzie Valley in its submission to NOGAP (YK-17, App.1).

8. Development of an Environmental Protection Plan should occur after an application to produce or transport oil or gas from the Beaufort Sea region has received approval. The Environmental Protection Plan should:

- 8.1. detail the mitigative measures which will be applied during the design, construction, operation and abandonment of a project;
- 8.2. include the mitigative measures described in the application and during the public review process;
- 8.3. be developed with the regulatory agencies, native organizations and communities;
- 8.4. form the basis of the environmental protection conditions attached to the licences, permits and certificates issued by regulatory agencies to approve or licence an application;
- 8.5. be revised as details of the design or procedures change; and
- 8.6. be publically reviewed.

#### Rationale

The Department of Renewable Resources in its review of the Environmental Impact Statement commented on the paucity of mitigative measures (p. 7). Supplementary material filed by the proponents included a more comprehensive review of possible mitigative measures relating to a few wildlife species (barren-ground caribou, ringed seal and narwhal).

Should an application to produce or transport oil or gas from the Beaufort Sea region be filed, the review of the application will focus partly on the mitigative measures presented to minimize environmental impact. Intervenor who participate in the review will also suggest mitigative measures. The review may result in changes to the design or procedures described within the application. For these reasons, the Department of Renewable Resources recommends that an Environmental Protection Plan be developed after the review of the application is complete.



The Environmental Protection Plan would outline the mitigative measures that the company will implement to minimize environmental impacts from their facilities and activities. Mitigative measures described in the application and during the review of the application should form the basis for the Environmental Protection Plan. Examples of two Environmental Protection Plans should have been filed with you by Interprovincial Pipe Line in Calgary. The proponents expected to produce environmental protection plans "on a project specific basis and... to interface with whatever regulatory agency or government body had an area of interest in the specific aspect of the project that was of concern." (5 Dec., Vol. II, 87). The Dene Nation recommended that the EARP recommendations should "be incorporated into any license, permit or approval which might be granted in the future." (YK-40, 3).

Both Mr. Pearce and Mr. Arnett stated that it was a regulatory agency's responsibility to implement recommendations through the terms and conditions of the approval (8 Dec., Vol. II, 39; 5 Dec., Vol. II, 89). This suggests that industry would be more likely to implement mitigative measures if these were stipulations of a permit. The proponents and Mr. Mar of the Norman Wells Coordinating Office supported the use of an Environmental Protection Plan as the basis for stipulations of permits (5 Dec., Vol. II, 89-90; 8 Dec., Vol. II, 33). Since the Environmental Protection Plan would be reviewed by all interested parties, it is likely that all legitimate interests would be incorporated into binding regulation if all the mitigative measures became terms and conditions of the various permits required for approval.

9. Some mitigative measures that should be instigated within the Beaufort Sea region and Mackenzie Valley include:

- 9.1. gravel quarries should not be located in alluvial areas;
- 9.2. all terrestrial gathering systems to transport oil and gas to the tanker or pipeline terminal should be buried;
- 9.3. no production or transportation facilities or activities should occur within 3.2 km of a peregrine falcon nest between 15 April and 15 September in the Mackenzie Valley;
- 9.4. safety conditions and practices governing the transport of fuel or other hazardous material by truck should be established with the Pollution Control Division of the Department of Renewable Resources and with the Department of Justice and Public Services;



- 9.5. production or transportation facilities should not be located on Cape Parry, Baillie Islands or the west coast of Bank's Island;
- 9.6. all employees, including polar bear monitors, who may have to deal with nuisance bears should complete the NWT Wildlife Service's Bear Detection and Deterrent Education and Training Program. Inadequately trained polar bear monitors should not be hired;
- 9.7. the proponents should incorporate work practices such as those outlined in "Bear/Human Conflicts", (IN-12, 10-11) into the design and operation of work camps;
- 9.8. access roads to a pipeline right-of-way should follow previous cut lines (eg. seismic lines);
- 9.9. elevated pipelines should not impede the movements of barrenground and woodland caribou or moose, with or without antlers; and
- 9.10. pipeline routing from the Beaufort Sea region up the Mackenzie Valley should parallel the Mackenzie River but remain several kilometers east of the river and west of the Bluenose barrenground caribou herd winter range.

#### Rationale

Recommended mitigative measures which were not described in the Environmental Impact Statement originate from evidence submitted by departmental witnesses or from questioning of the Proponents. Because specific applications are some distance in the future, additional mitigative measures will be added to the list. For instance, Mr. Gray stated that the Department of Renewable Resources is compiling a mitigation manual.

10. The effectiveness of applied mitigative measures should be monitored cooperatively by industry and regulatory agencies. The results of these studies should be evaluated at annual workshops held by industry, regulatory agencies and other interested parties. The results of the workshop should be used to update the Environmental Protection Plan.

Where possible new mitigative measures should be tested at established development sites. The development of new mitigative measures should be a joint venture of industry and regulatory agencies.



## Rationale

The effectiveness of mitigative measures which are implemented cannot be evaluated without monitoring. Many of the concepts proposed reflect untested technology. Mitigative measures now proposed to minimize impacts of those concepts are untested. Dr. Gunn's evidence states that current sites of industrial activity could be used to test new mitigative measures (IN-11, 21). Because the responsibility for development of mitigative measures is shared by industry and regulatory agencies, the monitoring of their effectiveness should also be a shared responsibility. In the Environmental Impact Statement, the proponents state that evaluation of the effectiveness of mitigative measures is their responsibility (Vol. 7, 1.1). Annual workshops which focus on the evaluation of active mitigative measures and the development of new mitigative measures should be used to update the Environmental Protection Plan and provide a feedback mechanism to the monitoring process.

Caribou Protection Measures are a specific mitigative measure designed to deal with a complex situation (Dr. Gunn, IN-11, 16). Annual one day workshops have proven to be an effective technique for involving regulatory agencies, scientists, native organizations and industry in review and revision of the Measures.

11. Industry should develop contingency plans for accidents resulting in spills of contaminants other than oil (methanol, hazardous wastes) or fire. Those contingency plans should be filed with any application to produce or transport oil or gas. A facility should be constructed by industry to store contaminants such as hazardous wastes produced in the Beaufort Sea region.

## Rationale

Present oil spill contingency plans approved by COGLA for exploration drilling in the Beaufort must now be capable of responding to the production oil spill scenarios outlined in Volume 6 of the EIS. Although the proponents state that new oil spill contingency plans will be developed for production, the Panel should not expect that these will be significantly different from those in use by the proponents.

In the Environmental Impact Statement, the proponents made a commitment to produce various contingency plans. However, the content of those plans, other than for oil spills, was not described (Vol. 6, 9.1). Therefore, contingency plans for methanol spills, contaminants (such as toxic liquids or hazardous wastes) or fires (either at a facility or of the



surrounding forest) could not be assessed. If these plans are filed with an application, their effectiveness can be evaluated. Mr. Smith explained the lack of contingency plans for the transportation of fuels along winter roads (YK-1, 4). This situation should not recur in the Beaufort region.

The proponents stated that a facility to store contaminants such as hazardous wastes was not required (9 Dec., Vol. 1, 97), although Mr. Smith recommended that such a facility be built (YK-1, 8). The oil and gas industry does use and produce contaminants. A 1981 report titled "Management of Solid Wastes from Beaufort Sea Operation" was produced for Dome Petroleum by I. Buist of B.E. Support Services, Hardy Associates (1978)Ltd. and the University of Toronto. The report defined hazardous wastes, like government agencies, to include oils, solvents, acids, alkalines, plastics and miscellaneous wastes such as sludges from the bottom of tanks. These kinds of wastes are still being disposed of in the Tuktoyaktuk dump. The report identified that 22 per cent of Dome's input to the dump in 1981 as plastics and oily solvents. The report stated:

"Waste disposal practices will probably receive close scrutiny at the Federal Environmental Review thus an acceptable plan should be in place. Dumping is likely to be unacceptable. Several technical problems arise in dumping and land filling such as permafrost, risk of oil leaching or migration and the general problem that waste is still in a form in which it can exert adverse effects, if it should be released from storage." (p. 23).

In addition, Mr. Arnett explained to the Panel that the procedure at Norman Wells was to ship toxic chemicals south (6 Dec., Vol. 1, 81). The report for Dome by Mr. Buist on waste management recommended the Kittigazuit site southwest of Tuktoyaktuk for storage of metal wastes and states:

"This site could possibly also serve as a hazardous waste disposal site equipped with incineration facilities and even secure land fill storage for toxic metal compounds. There is a strong incentive to collect such hazardous wastes in one location and give them careful custom treatment." (p. 34).

If land fill storage is recommended certainly large volumes of waste are expected. Industry's use and production of contaminants will only increase once production and transportation of oil and gas occurs. More secure disposal sites than the Tuktoyaktuk and Norman Wells dumps are required.



12. Research studies that should be initiated include:

- 12.1. NOGAP proposal priority No. 4, in the territorial government submission (YK-17), outlines planning required by the Department of Renewable Resources to prepare for increased development in the Beaufort Sea region. This study should be completed prior to production and transporation of hydrocarbons from the Beaufort Sea region;
- 12.2. the population size, productivity and movements of polar bears in the Beaufort region. Polar bear maternal denning habitat must be accurately identified. These studies are presently being conducted by territorial and federal government agencies prior to production and transportation of oil and gas in offshore zones;
- 12.3. the continuation of cooperative studies by industry and the federal and territorial governments on bear detection and deterrent systems and the effects of artificial islands on polar bear movements;
- 12.4. the ability of bears to avoid areas or food contaminated by oil;
- 12.5. the responses of barrenground caribou, muskox, woodland caribou and moose to industrial facilities and activities should be studied. This should be a cooperative venture of industry, the Department of Environment, DIAND and the Department of Renewable Resources. Techniques comparing undisturbed with disturbed behaviour, measuring the physiological condition of the animal and detecting other responses of animals to changes in their environment should be developed and refined immediately. Once begun, the studies should be conducted for a minimum of three years to observe the responses under varying environmental conditions; and
- 12.6. if a pipeline is constructed up the Mackenzie Valley, the movements of moose between summer habitat east of the Mackenzie River and wintering areas along the river should be documented for several years before construction of a pipeline begins. This should be funded jointly by industry and the Department of Renewable Resources.

Rationale

Questioning of the proponents and evidence submitted by the Department of Renewable Resources suggested that several studies should be conducted before production or transportation of oil and gas in the Beaufort region occurred. The



Department's participation in the Beaufort Sea EARP hearings has made some of the potential effects of Beaufort development on the Department and the resources it manages more evident. However, program planning to manage those effects has not occurred. It will require some time to develop those programs. Through the NOGAP exercise, the Department expects to receive funding to conduct this planning. The NOGAP study is essential to prepare appropriate departmental responses in all program areas: habitat management, pollution control, monitoring, surveillance and enforcement, wildlife management.

Mr. Latour explained that information on the polar bears in the Beaufort region was no longer current, that the 1982 study on the effects of artificial islands on polar bears had yielded inconclusive results and that it was unknown whether polar bears will avoid areas or food contaminated by oil (IN-9). The proponents explained their procedures for keeping bears away from oil spills and the Department of Renewable Resources submitted a draft of a polar bear contingency plan to the Panel at the Inuvik general session. Those plans may be very difficult to implement successfully (18 Nov., Vol. I, 48-49).

The evidence submitted by Dr. Gunn and Mr. Jakimchuk states that more studies need to be conducted to determine the effects of industrial facilities and activities on wildlife. Techniques to conduct these studies must be developed and existing techniques require refinement (IN-11, IN-11a).

Moose are a major source of protein for the residents of the Mackenzie Valley. Therefore it is important that moose remain available to the people. Mr. McCourt explained that little was known of the movements of moose to and from wintering areas along the Mackenzie River (5 Dec., Vol. II, 80-81). These movements should be determined before another pipeline is constructed up the Mackenzie Valley to ensure that movements of moose will not be impeded.

99999

Pam:622.32(26):(\*628)  
NWT  
FIN

Final argument of the Government  
of the Northwest Territories :  
Beaufort Sea Environmental  
Assessment and Review Panel.



University of Alberta Library



0 1620 0335 8064